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The effect of smartphone on the reading comprehension proficiency of Iranian EFL learners

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Abstract

Smart phones have turned into an everyday object for teenagers and many believe that these can be used to facilitate the language learning process. The extended band-with as well as the possibility of installing different apps on these smart phones has opened new opportunities for learners to better utilize these technologies for learning and comprehending different contents of language. The current study tries to investigate the impact of using such devices on increasing the reading comprehension competency of English language learners in the city of Ilam, Iran. In order to realize this objective, a sample of 40 high school students (boys and girls) in Ilam Mojtama Fani Tehran English language institute was selected. The participants were divided into two groups; namely experimental and control. Using pre-test and post-test as well as the SPSS software application, the study evaluated the difference in scores of these groups regarding the reading comprehension capability. The results show a significant difference between the experimental and control group following a month of using the application.

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Keywords: smart phones; learning English; reading comprehension

1. Introduction

This research reflects the impact of mobile phones on reading comprehension. Technology supported learning has a long history. From the early sixties on, new technological developments have inspired and supported new innovative learning arrangements. In particular, portable devices, coupled with intelligent teaching techniques allow learners to learn what, when, where and how they want.

One such portable device is the modern mobile phone. While the first generations of mobile phones did not offer much functionality beyond phoning and text messaging, the latest generation of smart phones offers far greater

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possibilities to offer multimedia content, location-based learning materials, and serious games to enhance the learners' enjoyment and motivation (Claudill, 2007). As learning with a mobile phone is fundamentally different from classroom learning, a new field of study has come into shape, namely that of Mobile Learning (Sharples, 2000). Using a mobile device in a learning context allows a learner to learn anywhere, anytime. Moreover, Internet accessibility allows instant communication with other users, while GPS-functionality makes it possible to access content that is relevant to a learning goal attached to the specific location of the learner. Increasing bandwidth facilitates the combination of different media (video, images, text and sound).

With many options for the delivery and management of digital learning materials available, insight into how students accept and utilize educational technology is necessary to ensure the selection of methods that provide the maximum benefit to students, and thereby support more efficient and complete learning.

The purpose of this research is to reflect on and understand the position of mobile learning in English reading comprehension education. It also hopes to develop a succinct definition applicable in the context of English books with mobile education. In order to realize these objectives, the following paper has been organized as follows: after a brief introduction, the next section deals with a review of previous literature followed by a section on the methodology of the paper. Next, the results and findings of the study are presented and finally the concluding remarks will be given.

2. Literature Review

In the mobile learning, also called m-learning, literature, there are various ways in which the idea of mobility has been discussed, so it is important to understand what is actually mobile. First, though, it may be prudent to consider why mobility is important to (language) learning. The idea of mobility is, in fact, closely linked to the nature of learning (Naismith et al., 2004). The relationship between mobility and learning isn't a concept that has emerged because of new technology. This relationship has also been discussed in the literature in terms of the close relation of learning to the context and the situation in which the learning need arises (Brown et al., 1989; Lave and Wenger, 1991).

The benefit of just-in-time, situated learning (Goodyear, 2000) illustrates another example of the discussion of this relationship, as does the idea that knowledge is information in context. Since mobile devices enable the delivery of context-specific information they are well placed to enable learning and the construction of knowledge (Nyiri, 2002).

It is also important to consider exactly what is mobile, not just the idea that learning and mobility are connected. "Mobile" could refer to the technology, the student, or the content. It could also be understood in terms of time-shifting or boundary-crossing. Vavoula and Sharples (2002) suggest that there are three ways in which learning can be considered mobile: in terms of space (the workplace, at home, at places of leisure), in terms of different areas of life (work demands, self-improvement, or leisure), and in terms of time (during the day, night, week days, and weekends).

In this understanding, learning and mobility really are understood to occur anywhere, at any time, in any facet of life. What is powerful about mobile devices such as personal smart phones is that many people tend to carry these devices with them all the time, so they are available for use for learning anytime and anywhere. On the contrary, strict interpretations of defining mobility in learning exist, such as claiming that: "A portable device that supports learning may be freely moved, but learner is mostly stationary, even though they are using a mobile device. Although the device is mobile and portable, the learning as an event cannot be described as mobile" (Ahonen et al, 2004, cited in Cavus & Ibrahim, 2009).

M-learning is an opportunity to break away from instruction that takes place in the classroom to another location while maintaining communication through a network. In the ideal case it integrates studies that take place in several avenues to promote both experiential and communal learning. Kim, Mims, and Holmes (2006) mention increasing numbers of institutions of higher education offering courses using mobile wireless technologies as alternative teaching and learning tools. For proponents of m-learning, the paradigm has much more potential than just delivering courses or parts of courses.

Roughly 94% of 18 34-year-olds report that they send or receive text messages using their phones, and 63% of this age group access the Internet using their phone (Zickuhr, 2011). There is little question that students'

communication habits regularly lead them to text while in class. Research conducted by the Pew Internet & American Life Project found that 14 17- year-olds who text typically send and/or receive roughly 60 text messages a day. Furthermore, 64% of teens with mobile phones have texted in class, and 23% access SNS via their phone (Lenhart, 2010). Indeed, researchers at one university found that 62% of students admitted that they had texted while in class (Ransford, 2009). Campbell (2006) reported that young people ages 18- 23 are more tolerant of mobile phones in the classroom when compared to older age brackets. Essentially, ‘‘Young people tend to have very positive perceptions of mobile phones and regard the technology as an important tool for social connection’’ (Campbell, 2006, p. 290).

3. Methodology

3.1. Research Questions

Based on the above discussion, the current paper tries to answer the following questions:

1. Is there any significant relationship between mobile device usage and the Iranian EFL learners' English reading comprehension proficiency?
2. Does Gender affect the impact of mobile device usage on reading comprehension proficiency?
3. What is the impact of using mobile phones reading application on Learners' reading comprehension?

In order to collect the required data, a sample of 40 high school students (boys and girls) in Ilam Mojtama Fani Tehran English language institute was selected. In this study, data gathered from experimental and control groups were compared to see if the particular method of learning contributes significantly to students’ language performance.

The results of the pre- and post-tests were compared to see if there was any improvement in the students’ reading comprehension performance.

Reading materials were instructed to students in the experimental group everyday for approximately one month. To ensure the suitability of the reading materials, a Readability test was carried out.

The reading comprehension test used in this study has been extracted from the "test your English" application. This test is a standardized, validated, and reliable test which is used by most of the learners all round the world. The reading comprehension test included thirteen passages.

At the end of the course, in order to measure the subjects' progress as a result of instruction a post-test similar to pre-test was conducted for all groups.

The study was done using both qualitative and quantitative research methods. Research using mixed methods is very suitable to the topics related to social sciences and behavioural patterns (Collins, Onwuegbuzie, & Jiao, 2007). Since the topic has a close relationship to the behavioural patterns of teenagers, and thus understanding a social aspect of a technology, this method was chosen to gather the data, interpret the facts and analyze the results.

The quantitative data was organized using Statistical Package for the Social Sciences (SPSS). The qualitative data obtained from the interview questions was organized using spread-sheets and word documents.

Inferential analysis was done by cross-tabulating three major independent variables (gender, age group of the teenager and usability of reading comprehension on smart phone) with all the dependent variables. Chi-Square tests were done for all cross-tabulations. Results of Chi-Square tests that showed significant relationship between independent and dependent variables were detailed further.

The total number of participants that completed the study questionnaire, consisting of twenty questions, was 40 (n=40).

Information was gathered from teenage boys and girls aged between 13-19 years. The teenagers were grouped into three groups: 13-14, 15-16 and 17-19 years for easy computation. This was mainly done to obtain answers that were suitable to each teenager’s individual mobile phone usage.

The following demographic information was considered as independent variables and was obtained from the first seven questions of the questionnaires.

- Gender

- Age group
- Usability of mobile phone/s application in the class
- Relationship of Mobile Application with the teenagers reading comprehension

4. Results

The participants in the experimental group filled out a survey anonymously to keep an internal validity between the researcher and the participants. When asked to choose the frequency of mobile phone use, as in Table 1, the experimental group students who reported using mobiles for more than two hours a day were in the majority (87.0%).

Table1: Frequency of daily mobile phone use

Average hour	Frequency	Percentage
Between 1-2 hours	8	20
Between 2-3 hours	17	42.5
Between 3-4 hours	15	37.5
Total	40	100

The data obtained from the pre-test and post-test of the reading comprehension were analyzed using SPSS. Standard statistical procedures were used to analyze the data. Analysis of the reliability coefficient of the tests was carried out to gauge the reliability of the tests used to obtain consistency and "an accurate representation of the total population under study" (Joppe, 2000, p. 1).

A one-way ANOVA was also run on the post-test scores of the reading comprehension test and it was found that there were at least two group means that were significantly different from each other. It is assumed that the significant difference in at least two group means is due to the fact that the groups involved were from different levels of English proficiency.

Table 2: One-Way ANOVA for the reading comprehension pre- and post-tests

		Sum of Squares	df	Mean Square	F	Sig.
Pre-Test	Between Groups	10.34	4	2.58	17.17	.000
	Within Groups	65.21	33	1.55		
	Total	75.55	37			
Post-Test	Between Groups	8.63	4	21.59	14.78	.000
	Within Groups	6.32	33	1.46		
	Total	71.8	37			

In order to determine if specific groups differed from each other, a post-hoc test was carried out. Based on the analysis of results, there were significant differences between the groups as a whole in terms of their overall performance in the pre-test of the reading comprehension.

Table 3. Statistics on reading

	Levene Statistic	df1	df2	Sig.
Reading pre-test	0.715	4	433	.582
Reading post-test	1.693	4	433	.150

Thirteen students responded to the questionnaire; a return rate of 76%. The questionnaire consisted of 10 questions aimed at gauging student perception of this unique use of Application to facilitate learning. The following five-point Likert scale was utilized:

Table 4 . Likert scale

Five-point Likert Scale	1 -	Strongly Disagree
	2 -	Disagree
	3 -	Not Sure
	4 -	Agree
	5 -	Strongly Agree

To examine whether there was any significant difference between the two groups before the experiment, an independent t-test was conducted. The descriptive statistics of the scores are presented in Table 5. According to the results of the means and standard deviation, the score in the pre-stage was 11.91 (SD=2.52) out of 20 in the control group, 11.87 (SD=3.18) in the experimental group. There was no statistically significant difference in the mean scores of the pre-test at the .05 level (t=-0.07, p> .05). It was confirmed that the students between the two groups did not show any difference in reading proficiency. To investigate whether there was any difference in reading comprehension within the groups, the participants' reading test scores were analyzed using a paired sample t-test. This Table summarizes the results of the t-test in the control group. Based on the results, the students in the control group showed significant improvement on the reading comprehension test. The mean score on the pre-test was 11.91 (SD=2.52) whereas the means of the post-test was 13.48 (SD=1.57). This showed that the students improved in reading comprehension after one semester much better after the experiment (t=-3.22, p< .00).

Table 5. Results of independent t-Test: Pre-test

Group	n	m	SD	t	df	p
Control	16	11.91	2.52	-0.07	42	.95
Experimental	18	11.87	3.18			

According to the results of the t-test in the experimental group, shown in Table 6, the pre-test score was 11.87 (SD=3.18) and the post-test score was 15.04 (SD=1.94). In other words, the students on the experimental group improved significantly on the reading comprehension than the control group did. The findings of the current study are not consistent with the result of Akyuz and Samsa (2009) that significant differences between pre- and post-tests were not found after three weeks of learning.

Table6. Results of Paired-sampled-Test: Experimental Group

N=23	Test	M	SD	*t*	*df*	*P*
RC	Pre	11.87	3.18			
	Post	15.04	1.94	-9.60	22	.00**

In sum, there was a significant difference between pre- and post-reading comprehension within the groups after experiment. The reason that all students produced higher scores on the post-test was certainly due to the weekly reading practice and exercises. The results of this study were comparable to the findings of previous work (Applebee, Langer, Nystrand & Gamoran, 2003; Langer 2001; Nystrand & Gamoran, 1991) that reading discussion enhances reading comprehension.

Independent t-tests were conducted to investigate statistically significant differences in reading improvement by the two groups as demonstrated in Table 6. The analysis confirmed that there was a statistically significant difference between the two groups on the post-test ($p<.05$) but no such difference on the pre-test ($p> .05$).

To sum up, the results proved that the students who interacted with their application on mobile phones comprehended more reading texts. It can be concluded that synchronous discussion through mobile phones can be a variable to enhance reading comprehension.

This is possibly due to the characteristics and features of mobile phones that help learners extend learning opportunities in a convenient way (Attewell & Webster, 2005; Chinnery, 2006) and bring student interest and motivation into learning (Norbrook & Scott, 2003).

5. Conclusions

This study focused on understanding the effect of smartphone on the Reading Comprehension Proficiency of Iranian EFL Learners. A mixed methods approach was employed to explore the research questions. Quantitative data was collected through questionnaires, and qualitative data through interviews. The survey and interview participants were teenagers aged 13 to 19 years, irrespective of whether they possessed a mobile phone. The findings from this study revealed that participants perceptions on using mobile phone are not satisfactory. Every interview and questionnaire expressed concerns on internet via teenagers' mobile phones and a very high number (n=6, which is 86%) of them expressed negative impacts outweighing positive purposes of mobile phones.67% (n=26) of study participants and 100 % (n=7) of interviewed participants agreed with using mobile phones while at class. Similarly, 70.4% (n= 29) of survey participants' and 100% (n=7) of interview participants supported banning the use of mobile phones while the teacher is in the class. 27.8% of participants said that there should be a minimum limit to possess a mobile phone, and 25.2% of participants said there probably should be, which together amounts to 53% (n=21).

The major concerns expressed by the participants through this study are:

- Addiction to learner
- Interruption of teaching time, study time and other distractions
- Use of mobile phones while at classes (including use by co-partner)
- Lessening physical activity
- Loss of control over the teenager
- Loss of control for teenager over the information.

References

Akyuz,H.I. ,& Samsa,S.(2009).The effects of blended learning environment on the critical thinking skills of students. *Procedia Social and Behavioral Sciences, 1*(1), 1744–1748.

Applebee,A. N., Langer, J. A., Nystrand, M., & Gamoran, A. (2003).Discussion-based approaches to developing understanding: Classroom instruction and student performance in middle and high-school English .*American Educational Research Journal, 40*(3),685-730.

Attewell,J.,&Webster,T.(2005).Engaging and supporting mobile learners. *Mobile learning any times every where: A book of papers from m-Learn 2004.* London: LSDA, 15-19.

Brown, J. (2007, March24). Cyber-bullying goes high-tech. *The New Zealand Herald*. Retrieved May15, 2007

Campbell, S. W., & Park, Y. J. (2008). Social implications of mobile telephony: The rise of personal communication society. *Sociology Compass, 2*(2), 371-387.

Chinnery ,G. M. (2006). Going to the MALL: Mobile assisted language learning. *Language Learning & Technology, 10*(1), 9-16.

Kim,H.S.(2008).A study of L2 hypertext reading in the Korean university Kim,

Langer, J.A. (2001).Beating the odds: Teaching middle and high-school students to read and write well. *American Educational Research Journal, 38*(4), 837-880. Lee,M.J.W.(2005).Mobile learning: Should we get a move on? *Training and Development*

Norbrook, H., & Scott, P. (2003). Motivation in mobile modern foreign language learning.

Nystrand, M., & Gamoran, A. (1991). Instructional discourse, student engagement, and literature achievement. *Research in the Teaching of English, 25*(3), 261-290.

Sharples, M. (2000). The design of personal mobile technologies for lifelong learning. *Computers & Education, 34*(3), 177-193.